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**APPLICATION  
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LETTERS PATENT**

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**FOR:**                **DYNAMIC PRICING SYSTEM AND  
METHOD FOR ELECTRONIC  
STORES**

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# DYNAMIC PRICING SYSTEM AND METHOD FOR ELECTRONIC STORES

## BACKGROUND OF THE INVENTION

### *Field of the Invention*

5 The present invention relates to a system and method for electronic commerce, and more particularly to a system and method by which an electronic store (e.g., an "eStore" provided on a world-wide network such as the Internet) can offer a competitive price to a customer when there is another eStore that offers a competitive price, and the prospective customer is somehow aware of the existence of such a competition.

### *Description of the Related Art*

10 Shopping over the Internet is increasingly becoming important and a prime way of doing business and conducting transactions. As the amount of Internet shopping explodes, electronic businesses (e.g., so-called "eBusinesses") and eStores must address similar kinds of pricing issues that conventional stores face. One pricing issue is that of competitive pricing. A number of comparison shopping business sites have been developed (e.g., e-compare.com) which allows  
15 comparison shopping over the Internet.

A typical scenario is described below. A user looking for a book "Of Mice and Men" (or the like) visits the comparison shopping site and inquires about the book. The comparison

shopping site keeps track of all eStores that sell this book. It runs a query asking for the price and shipping and handling cost of this book on each of these sites and lists the prices to the user in the form of a table. The table contains entries, such as shop name, base price, shipping charges, availability, etc. The user can immediately compare the prices and the other attribute(s) and pick one of the stores at which to shop. Such comparison sites also typically provide a “click-through” facility whereby the user can directly click on the Universal Resource Locator (URL) of the eStore that qualifies the user criteria and the user can shop at that store. In this manner, the comparison shopping business makes a commission for the referral to the eStore from the eStore from which the user buys the product.

This is a “win-win” situation for the customer since the customer gets the best price without actually visiting many eStores manually. The comparison shopper “wins” due to referral commissions, and the eStore in which the user buys the product or service “wins” because it obtains the business it may not otherwise have obtained.

However, a drawback with the above system is that other stores do not have a chance of winning even though they might be willing to bring the price down if they knew that there was a competitive offer. This is a problem.

## SUMMARY OF THE INVENTION

In view of the foregoing and other problems, disadvantages, and drawbacks of the conventional methods and structures, an object of the present invention is to provide a method and structure in which electronic commerce is performed such that stores have a chance of

winning a bid/transaction since they have the opportunity to know about the outstanding competitive bids, and that such stores may be willing to bring the price down for an item or service in order to make the sale.

5 In a first aspect of the present invention, a method (and system) for conducting electronic commerce, includes electronically visiting, by a customer interested in shopping for an item (e.g., a product or service), a comparison shopping site ("CompShop"), and inquiring about the item and comparative prices thereof, running, by the "CompShop", a query on all of a plurality of electronic stores it is aware of which handle the item asking for a price of the item, and selectively determining, by at least one of the electronic stores, an offer price of the item, and  
10 selectively returning one of a static price and a modified price, the modified price resulting from the at least one of the electronic stores learning the best (e.g., lowest or highest offer price depending upon the embodiment) price received by the CompShop from all of the electronic stores.

15 With the invention, for the eStore to know that there is a competitive store and that the prospective customer is aware of this competition, the eStore somehow must know that the customer is using a comparison shopping site to inquire about the prices of the products or services. Then, the eStore can appropriately price the commodity if the request is made through a comparison shopping site. Otherwise, it can return its standard price.

20 The above operation can be compared to the traditional model of "coupon clipping" or "mail in rebates". Stores typically give a special price to customers who bring in coupons. However, the stores rely on the fact that there will be many customers who do not clip coupons or who will forget to turn in the mail-in rebates.

Similarly, eStores can rely on the fact that not all customers are going to visit them

through comparison shopping sites and can afford to give a competitive price to those who do visit them through such sites.

Thus, with the invention, consumers should receive lower prices, and electronic stores should make sales which they otherwise would not have made. At the same time, the system allows the eStores to dynamically adjust prices based upon demand, inventory, and other market conditions.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

The foregoing and other purposes, aspects and advantages will be better understood from the following detailed description of a preferred embodiment of the invention with reference to the drawings, in which:

Figure 1 illustrates an exemplary architecture of the invention;

Figure 2 illustrates components of the Smart Store according to the present invention;

Figure 3 illustrates a flowchart of the method 300 of performing electronic commerce according to the present invention;

Figure 4 illustrates an exemplary hardware/information handling system 400 for incorporating the present invention therein; and

Figure 5 illustrates a signal bearing medium 500 (e.g., storage medium) for storing steps of a program of the method 300 according to the present invention.

## DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION

Referring now to the drawings, and more particularly to Figures 1- 5, there are shown preferred embodiments of the method and structures according to the present invention.

Turning to Figure 1, an exemplary environment 100 of the architecture of the present invention is shown. In Figure 1, there are a plurality of electronic stores ("eStores") 101, a comparison shopping site (e.g., hereafter "CompShop") 102, and the customer 103. At least one of the eStores includes the inventive structure, thereby making it a "smartStore" 104. Each of the above components 101-104 is linked together electronically via a network such as the Internet or an Intranet.

In Figure 1, the solid arrows indicate the "visitor" at the tail and the "visitee" at the head. The dotted arrow indicates the smartStore 104 (e.g., the structure of the present invention) visiting the "CompShop" to snoop on (learn) the price. The bullet-headed dotted line indicates the eventual binding of the customer to the smartStore 104

Figure 2 illustrates the components of the smartStore 104 according to the present invention. In an exemplary embodiment, the smartStore 104 includes a browser 1041 of the client, a database 1042 for storing prices, etc. of its products, a detector 1043 for detecting whether the query is being made from a CompShop or not, a transceiver 1044 for transmitting prices etc. to the CompShop and for receiving queries therefrom, a receiver 1045 for receiving requests from the customer for ordering the product, and a computing (processing) unit/program 1046.

Further, the smartStore may include a caching facility for caching recent prices. Along

these lines, a cache 1047 may be provided in the CompShop for similarly caching recently provided prices from electronic stores.

Turning to Figure 3, a flowchart is shown of the method 300 according to the present invention.

5 In operation, the invention works as follows.

That is, in steps 301 and 302, the customer is interested in shopping for an item A, and visits a comparison shopping site "CompShop", and inquires about the item and comparative prices thereof.

10 In step 303, the "CompShop" runs a query on all the eStores it is aware of who carry the product, service, etc. of interest (hereafter assumed to be an "item A"), and asks for the price of the item. Steps 304-309 represent new steps added to the conventional method.

In running the query, what is returned to the comparison shopping site will depend upon whether the electronic store is a smartStore or a conventional electronic store. Thus, in step 304, it is determined by the system whether the eStore is a smartStore.

15 In step 304, if the eStore is determined not to be a smartStore, then in step 305 a standard price is returned and the process loops back to step 303 for the system to wait for another request.

20 If the eStore is determined to be a smartStore (e.g., a "YES") in step 304, then in step 306, the eStore that implements the invention (e.g., "smartStore" 104), sends a request to the "CompShop" asking for comparative prices of item "A", and in step 307 determines whether the asking price is the best price that can be offered. If it is determined to be the best price, then the smartStore loops to step 305 and returns its standard price.

If "NO" in step 307, then in step 308, the smartStore adjusts the price to issue a competitive price, and in step 309 returns a new price to the "CompShop". Thus, the smartStore

does not return a static price, but instead automatically changes the price depending on who is asking for the price and what the best price (thus far) is as recorded and provided by the CompShop.

5 The smartStore keeps a list of comparison shopping sites. Thus, if a request is not from a comparison shopping site, then the smartStore returns its standard price in step 305. If the request for price is from a comparison shopping site like a "CompShop", it actually turns around and submits a request to the "CompShop" or another comparison shopping site to get a list of all comparison prices for the item.

10 When the smartStore obtains a comparative list of pricing, it goes through the list and determines if it is offering a competitive (the lowest) price. If not, the smartStore checks to see if it can afford to offer a lower price based upon the comparison and its own cost price and required profit margin.

15 If the smartStore can offer a lower price to attract the customer, it will return that price to the "CompShop" request. Otherwise, it will return its standard price to the "CompShop". As such, a "Dutch auction" (e.g., reverse auction) is engendered by the invention in which the customer obtains the lowest price possible.

Then, in step 310, the "CompShop" returns the list of prices to the user. The user, based upon the prices received, picks their choice of eStore possibly choosing "SmartStore" because it used the present invention to offer a competitive price on the item.

20 Thus, with the unique and unobvious features of the present invention, a win-win-win situation is created for the customer, the comparison shop and the eStore. That is, the customer gets the best price without actually visiting many eStores manually, the comparison shop "wins" due to referral commissions, and the eStore (in which the user buys) "wins" because it obtains



the business it may not otherwise have obtained.

Further, other stores have a chance of winning since they have the opportunity to know about the outstanding competitive bids and may be willing to bring the price down (or up depending upon the environment and scenario).

5 Figure 4 illustrates a typical hardware configuration of an information handling/computer system in accordance with the invention and which preferably has at least one processor or central processing unit (CPU) 411.

10 The CPUs 411 are interconnected via a system bus 412 to a random access memory (RAM) 414, read-only memory (ROM) 416, input/output (I/O) adapter 418 (for connecting peripheral devices such as disk units 421 and tape drives 440 to the bus 412), user interface adapter 422 (for connecting a keyboard 424, mouse 426, speaker 428, microphone 432, and/or other user interface device to the bus 412), a communication adapter 434 for connecting an information handling system to a data processing network, the Internet, an Intranet, a personal area network (PAN), etc., and a display adapter 436 for connecting the bus 412 to a display  
15 device 438 and/or printer 439.

In addition to the hardware/software environment described above, a different aspect of the invention includes a computer-implemented method for performing the above method. As an example, this method may be implemented in the particular environment discussed above.

20 Such a method may be implemented, for example, by operating a computer, as embodied by a digital data processing apparatus, to execute a sequence of machine-readable instructions. These instructions may reside in various types of signal-bearing media.

Thus, this aspect of the present invention is directed to a programmed product, comprising signal-bearing media tangibly embodying a program of machine-readable instructions

executable by a digital data processor incorporating the CPU 411 and hardware above, to perform the method of the invention.

This signal-bearing media may include, for example, a RAM contained within the CPU 411, as represented by the fast-access storage for example. Alternatively, the instructions may be contained in another signal-bearing media, such as a magnetic data storage diskette 500 (Figure 5), directly or indirectly accessible by the CPU 411.

Whether contained in the diskette 500, the computer/CPU 411, or elsewhere, the instructions may be stored on a variety of machine-readable data storage media, such as DASD storage (e.g., a conventional "hard drive" or a RAID array), magnetic tape, electronic read-only memory (e.g., ROM, EPROM, or EEPROM), an optical storage device (e.g. CD-ROM, WORM, DVD, digital optical tape, etc.), paper "punch" cards, or other suitable signal-bearing media including transmission media such as digital and analog and communication links and wireless. In an illustrative embodiment of the invention, the machine-readable instructions may comprise software object code, compiled from a language such as "C", etc.

While a preferred embodiment of the present invention has been described above, it should be understood that it has been provided as an example only. Thus, those skilled in the art will recognize that the invention can be practiced with modification within the spirit and scope of the appended claims.

For example, while it is noted that the example above is directed to providing the lowest price to the consumer, in some situations a higher price may be desirable to be offered by the smartStores.

In another embodiment of the invention, the SmartStore may not necessarily visit the comparison shopping engine on every request, but instead may cache the information and only

infrequently visit the comparison shopping engine.

In yet another embodiment of the invention, the system may allow the price comparison to be performed on not necessarily exactly the same type of item, but on a similar item or even offer a graded price based on a search. For instance, if the hard cover of a particular book is available elsewhere for \$20, the system may adjust the price of the soft cover of the same book from \$18 to \$15.

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